Project Euler #16: Power digit sum

This problem is a programming version of Problem 16 from projecteuler.net

$2^9 = 512$ and the sum of its digits is $5 + 1 + 2 = 8$.

What is the sum of the digits of the number 2^N ?

Input Format
The first line contains an integer T , i.e., number of test cases.
Next T lines will contain an integer N.

Output Format
Print the values corresponding to each test case.

Constraints
$1 \leq T \leq 100$
$1 \leq N \leq 10^4$

Sample Input

```
3
3
4
7
```

Sample Output

```
8
7
11
```